

# Source Water Assessment Report



**Public Water Supply: COLBY, CITY OF**

**Assessment Areas Include:  
178, 179**



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Reports were generated with the Automated Source Water Assessment Tool (ASWAT). Assessments were completed online using ASWAT by hundreds of state employees, public water supply staff, and technical assistant providers throughout the State of Kansas.

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# Report Description

## Detailed Explanation of Entire Report:

The 1996 amendments to the Safe Drinking Water Act require each state to develop a Source Water Assessment Program (SWAP) and a Source Water Assessment (SWA) for each Public Water Supply (PWS) that treats and distributes raw source water. In Kansas there are 761 public water supplies that require SWAs. A SWA includes a delineation of the source water assessment area, an inventory of potential contaminant sources, and a susceptibility analysis.

A PWS can consist of one or more individual assessment areas that require different assessments. In general, an assessment area is delineated at a two-mile fixed radius for a groundwater well. A surface water intake assessment area is the upstream-drainage area (watershed), inside the state border. Additionally, an assessment area can consist of an individual well, group of wells, an individual surface water intake, or multiple surface water intakes.

After each assessment is completed a report is automatically generated using an Internet-based application called the Automated Source Water Assessment Tool (ASWAT). The individual assessment reports combine to form the entire SWA report for a PWS.

A map of each Assessment Area was also generated with ASWAT. However, for security reasons the maps are not included in this report. To obtain a copy of the map(s), please contact your local PWS.

All PWS reports will be available for viewing and downloading on KDHE's Watershed Management Section website(<http://www.kdhe.state.ks.us/nps>) in 2004.

## COLBY, CITY OF Summary:

AA	Type	Diversion Id
178	Ground water multiple wells	012, 009, 006, 007
179	Ground water multiple wells	014, 011, 013

Public Water Supply: **COLBY, CITY OF**  
Assessment Area: **178**  
Diversion Id's: **012, 009, 006, 007**  
Status: **Accepted**  
Submit Date: **2002-10-07 16:48:28**

## **Executive Summary:**

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

# Executive Summary

Public Water Supply: COLBY, CITY OF  
Assessment Area: 178

## Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	72	69	72	76	68	76
SLS Range	Mid	Mid	Mid	Mid	Mid	Mid

A – Microbiological

B\* – Nitrates

C\* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

## Susceptibility Likelihood Range

SLS Range	
0–50	Low Susceptibility
51–80	Moderate Susceptibility
81–100	High Susceptibility

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## Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

# Potential Sources

Public Water Supply: **COLBY, CITY OF**  
Assessment Area: **178**

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210677	General Farm, Primarily Crop	191	B
210768	General Farm, Primarily Crop	191	B
210802	General Farm, Primarily Crop	191	B
210628	Animal Specialty Services	752	B
210609	Single-family Housing Construction	1521	B
211071	Single-family Housing Construction	1521	B
210881	Nonresidential Construction	1542	B
210913	Nonresidential Construction	1542	B
210631	Highway and Street Construction	1611	B
210815	Highway and Street Construction	1611	B
210850	Meat Packing Plant Manufacturing	2011	B
210700	Newspapers Publishing and Printing	2711	B
210686	Commercial Printing-Lithographic	2752	B
210769	Commercial Printing-Lithographic	2752	B
210805	Commercial Printing-Lithographic	2752	B
210867	Machinery, Except Electrical Manufacturing	3599	B
210848	Farm Product Warehousing and Storage	4221	B

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210619	Farm and Garden Machinery	5083	B
210912	Farm and Garden Machinery	5083	B
210846	Gasoline Service Station	5541	B
210761	Photofinishing Laboratory	7384	B
210644	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
210696	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
210878	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
210809	Auto Truck Repair Service	7538	B
210810	Auto Truck Repair Service	7538	B
210830	Auto Truck Repair Service	7538	B
210834	Auto Truck Repair Service	7538	B
210844	Auto Truck Repair Service	7538	B
210936	Auto Truck Repair Service	7538	B
210676	Car Wash	7542	B
210634	Repair Services, Nec	7699	B
210645	Repair Services, Nec	7699	B
210773	Repair Services, Nec	7699	B
210870	General Farm, Primarily Crop	191	C
211060	Cattle Farm	211	C
210862	Veterinary Services, Specialties	742	C



## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210564	Drilling Oil and Gas Wells	1381	C
210986	Oil and Gas Field services	1389	C
210973	Single-family Housing Construction	1521	C
211006	Nonresidential Construction	1542	C
211083	Nonresidential Construction	1542	C
211072	Flour Mill and Other Food Grain Milling	2041	C
210966	Bottled and Canned Soft Drinks Production	2086	C
210960	Commercial Printing NEC	2759	C
211086	Hardware Manufacturing	3429	C
211033	Machinery, Except Electrical Manufacturing	3599	C
211099	Machinery, Except Electrical Manufacturing	3599	C
211007	Surgical and Medical Instruments Manufacturing	3841	C
210987	Signs and Advertising Display Manufacturing	3993	C
210940	Construction and Mining Machinery	5082	C
210972	Construction and Mining Machinery	5082	C
210874	Farm and Garden Machinery	5083	C
210941	Farm and Garden Machinery	5083	C

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210991	Farm and Garden Machinery	5083	C
210975	Scrap and Waste Materials	5093	C
210942	Gasoline Service Station	5541	C
211052	Gasoline Service Station	5541	C
211054	Gasoline Service Station	5541	C
211069	Mobile Home Park	6515	C
210988	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
211046	Auto Truck Repair Service	7538	C
211087	Auto Truck Repair Service	7538	C
211015	Repair Services, Nec	7699	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
2001122	Colby Experiment Station	A-URTH-SA01	C

## Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000245	Hi-plains Coop, Bulk Plant	02940	B

## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000314	Service Oil Co	03863	B
3001386	Pyramid Oil,	24828	B
3001538	Conoco, C C	25799	B
3001547	Phillips 66, Colby (ace Services)	25852	B
3002435	Colby Public Power	42665	B

## Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000941	COLBY PWS #6 SITE	C609770627	B
7000936	ACE SERVICES, INC.	C609700001	C
7000942	METZLER PRIVATE WELL SITE	C609771176	C

## Regulated Solid Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000932	COLBY IMPLEMENT	I-UR06-NO04	C

## Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6001883	COLBY MWTP	M-UR06-OO01	C
6001884	COLBY MWTP	M-UR06-OO01	C
6002036	GOLDEN PLAINS AG. TECH.	P-UR06-OO01	C

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Assessment Area: **178**  
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## **Added Sources:**

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

# Added Sources

Public Water Supply: COLBY, CITY OF  
Assessment Area: 178

## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000092	irrigation water well	10012	B
9000091		10028	B
9000085	cultivated cropland	115	B
9000093	cropland	115	B
9000094	dryland cropland	115	B

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## **Potential Contaminants Summary:**

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

# Potential Contaminants Summary

Public Water Supply: COLBY, CITY OF  
Assessment Area: 178

## Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
10	5	51	10	29	11

A – Microbiological

B\* – Nitrates

C\* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds



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## Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

**A** – Microbiological    **B** – Inorganic Compounds                      **B1** – Eutrophication – Phosphorous  
**B2** – Sedimentation    **B\*** – Nitrates    **C** – Synthetic Organic Compounds  
**C\*** – Pesticides            **D** – Volatile Organic Compounds

# Potential Contaminants Listing

Public Water Supply: COLBY, CITY OF  
Assessment Area: 178

## Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
2086	Bottled and Canned Soft Drinks Production	BOD	A
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
211	Cattle Farm	Sanitary, Fertilizers TSS, pesticides, Erosion and sedimentation	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C*
5082	Construction and Mining Machinery	NA	NA
1381	Drilling Oil and Gas Wells	Oil, Salt Water	B
"	"	"	C
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	A

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	B
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
3429	Hardware Manufacturing	Metals	B
1611	Highway and Street Construction	Sedimentation	B2
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D
2011	Meat Packing Plant Manufacturing	BOD, pathogens, Oil and grease	A
"	"	"	B*
6515	Mobile Home Park	Sanitary wastes, Fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B*
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
7384	Photofinishing Laboratory	NA	B
"	"	"	D
5093	Scrap and Waste Materials	Metals, TSS	B

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
3993	Signs and Advertising Display Manufacturing	inorganics, VOCs	B
"	"	"	D
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
3841	Surgical and Medical Instruments Manufacturing	inorganics, VOCs	B
"	"	"	D
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	A
"	"	"	B
752	Animal Specialty Services	Sanitary, fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	B

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	C
"	"	"	D
2752	Commercial Printing–Lithographic	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
5083	Farm and Garden Machinery	inorganics	B
191	General Farm, Primarily Crop	fertilizers, Pesticides	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C*
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
7699	Repair Services, Nec	inorganics	B

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## **Protection Measures:**

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

# Protection Measures

Public Water Supply: **COLBY, CITY OF**

Assessment Area: **178**

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
2086	Bottled and Canned Soft Drinks Production	BOD	Wastewater pretreatment and/or discharge to a POTW.	40 CFR 407 and State or federal Storm water pollution prevention regulations
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
211	Cattle Farm	Sanitary, Fertilizers TSS, pesticides, Erosion and sedimentation	Proper application of fertilizers and pesticides. Proper cleaning of equipment and disposal of chemicals. Maintain riparian areas along waterways and keep cattle out of these areas. Proper Waste Management and Grazing Management.	KDHE– Livestock Waste Management Section, KAR 28–16, KDA, County Soil Conservation District, NRCS
5082	Construction and Mining Machinery	NA	Discharge to POTW	NA
1381	Drilling Oil and Gas Wells	Oil, Salt Water	Drill water retention and treatment	KAR 28–41, 45, 40 CFR 435

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	Wastewater pretreatment and/or discharge to a POTW	40 CFR 122 and State or federal Storm water pollution prevention regulations
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
3429	Hardware Manufacturing	Metals	Minimize outdoor storage and control storm water runoff. Pre-treat process wastewater prior to discharge to POTW	40 CFR 464 and State or federal Storm water pollution prevention regulations
1611	Highway and Street Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
2011	Meat Packing Plant Manufacturing	BOD, pathogens, Oil and grease	Wastewater pretreatment and/or discharge to a POTW	40CFR 432 and State or federal Storm water pollution prevention regulations



## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
6515	Mobile Home Park	Sanitary wastes, Fertilizers	Discharge to POTW. Minimize use of lawn chemicals	KAR 28-5
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28-16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28-41, 45, 40 CFR 435
7384	Photofinishing Laboratory	NA	Discharge to POTW. Recycle chemicals	CFR 40 459
5093	Scrap and Waste Materials	Metals, TSS	Minimize contact with storm water	State or federal Storm water pollution prevention regulations
3993	Signs and Advertising Display Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	40 CFR 459 and State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28-48, KDHE, KDEM
3841	Surgical and Medical Instruments Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	Discharge to POT	NA
752	Animal Specialty Services	Sanitary, fertilizers	Collect and treat wastes.	NA
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
2752	Commercial Printing–Lithographic	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
5083	Farm and Garden Machinery	inorganics	Discharge to POTW	NA
191	General Farm, Primarily Crop	fertilizers, Pesticides	Maintain good erosion control practices and minimize the use of chemicals	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA

Public Water Supply: **COLBY, CITY OF**  
Assessment Area: **178**  
Diversion Id's: **012, 009, 006, 007**  
Status: **Accepted**  
Submit Date: **2002-10-07 16:48:28**

## **Assessment Analysis:**

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

# Assessment Analysis

Public Water Supply: **COLBY, CITY OF**  
Assessment Area: **178**

## Ground Water Multiple Wells Analysis

**A** – Microbiological    **B** – Inorganic Compounds  
**B\*** – Nitrates            **C** – Synthetic Organic Compounds  
**C\*** – Pesticides        **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	No	0	0	0	0	0	0
5	Does a PWS own or control all the areas around the wells?	No	1	1	1	1	1	1
6	Does Zone B consist entirely of native grass?	No	2	2	2	2	2	2
7	Is there a contaminated well in Zone B?	Yes	1	1	1	1	1	1
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
12	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0
16	Have all livestock producers implemented water quality protection measures?	No	1	0	1	0	0	0
17	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
24	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
25	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
29	Is a solid waste landfill in Zone B or C?	No	0	0	0	0	0	0
30	Are there unplugged, abandoned water wells present in Zone C?	Yes	2	1	1	1	1	1
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
34	Is each confined livestock facility registered with KDHE?	Yes	0	0	0	0	0	0
35	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
36	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
39	Are watershed water quality protection plans in place?	No	1	1	1	1	1	1

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## **Site Comments:**

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

# Site Comments

Public Water Supply: COLBY, CITY OF  
Assessment Area: 178

## Comments for Unregulated Sites

Did Not Receive Any Comments
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## Comments for Regulated Confined Animal Feeding Operations Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Colby Experiment Station	2001122	There is no groundwater monitoring at this facility.	Nicole Fisher

## Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments
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## Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Colby Public Power	3002435	The site is currently being monitored from the pipeline diesel leak in 1998. The leak was upgradient of public water supplies.	Nicole Fisher



## Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Conoco, C C	3001538	The site is closed from a waste oil contamination. The ground was excavated to 8' to remove contaminated soil.	Nicole Fisher
Hi-plains Coop, Bulk Plant	3000245	The site is closed from the gasoline leak in 1996. PWS was down gradient and no contamination was detected.	Nicole Fisher
Phillips 66, Colby (ace Services)	3001547	This site had hydrocarbon contamination and is down gradient of the PWS. The site is currently active.	Nicole Fisher
Pyramid Oil,	3001386	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	Nicole Fisher
Service Oil Co	3000314	The site is closed from a gasoline leak. No contamination was detected.	Nicole Fisher

## Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments
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## Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments
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## Comments for Regulated Waste Water Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
COLBY IMPLEMENT	6000932	This facility uses nondischarging lagoons.	Nicole Fisher

## Comments for Regulated Waste Water Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
COLBY MWTP	6001883	This facility uses nondischarging lagoons.	Nicole Fisher
GOLDEN PLAINS AG. TECH.	6002036	This facility sends its wastewater to the Colby MWTP.	Nicole Fisher

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### **Added Site Comments:**

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

# Added Site Comments

Public Water Supply: **COLBY, CITY OF**  
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## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
cropland	9000093	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
cultivated cropland	9000085	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
dryland cropland	9000094	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
irrigation water well	9000092	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Unknown	9000091	This information was obtained from the wellhead Protection Plan.	Nicole Fisher

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## **Analysis Question Comments:**

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

# Analysis Question Comments

Public Water Supply: COLBY, CITY OF  
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## Comments for Analysis Questions

Analysis Question	Question Comments	Author
Are cropland nutrient management plans in place?	Established management procedure for the cropland is for soil testing to be done annually and fertilizer be applied at or below recommended rates. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	Established management procedure for the cropland is for soil testing to be done annually and fertilizer to be applied at or below recommended rates. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
N/A or Unknown	Well #12 was contaminated by diesel in the past. Monitoring wells were established. Water quality analysis indicates it is free of contamination. This information was obtained from the wellhead Protection Plan.	Nicole Fisher
N/A or Unknown	The city closed Well #8 in 1981 due to the contamination from chrome. Relocation of the well is under consideration. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher

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## **Executive Summary:**

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

# Executive Summary

Public Water Supply: COLBY, CITY OF  
Assessment Area: 179

## Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	<b>79</b>	<b>76</b>	<b>77</b>	<b>84</b>	<b>74</b>	<b>84</b>
SLS Range	Mid	Mid	Mid	High	Mid	High

A – Microbiological

B\* – Nitrates

C\* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

## Susceptibility Likelihood Range

SLS Range	
<b>0–50</b>	<b>Low Susceptibility</b>
<b>51–80</b>	<b>Moderate Susceptibility</b>
<b>81–100</b>	<b>High Susceptibility</b>



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## Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

# Potential Sources

Public Water Supply: **COLBY, CITY OF**  
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## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
211060	Cattle Farm	211	B
210564	Drilling Oil and Gas Wells	1381	B
210986	Oil and Gas Field services	1389	B
210973	Single-family Housing Construction	1521	B
211006	Nonresidential Construction	1542	B
210966	Bottled and Canned Soft Drinks Production	2086	B
210960	Commercial Printing NEC	2759	B
211033	Machinery, Except Electrical Manufacturing	3599	B
211007	Surgical and Medical Instruments Manufacturing	3841	B
210987	Signs and Advertising Display Manufacturing	3993	B
210972	Construction and Mining Machinery	5082	B
210941	Farm and Garden Machinery	5083	B
210991	Farm and Garden Machinery	5083	B
210975	Scrap and Waste Materials	5093	B

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210942	Gasoline Service Station	5541	B
211052	Gasoline Service Station	5541	B
211054	Gasoline Service Station	5541	B
211069	Mobile Home Park	6515	B
210988	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
211046	Auto Truck Repair Service	7538	B
210600	General Farm, Primarily Crop	191	C
210677	General Farm, Primarily Crop	191	C
210768	General Farm, Primarily Crop	191	C
210802	General Farm, Primarily Crop	191	C
210870	General Farm, Primarily Crop	191	C
211110	General Farm, Primarily Crop	191	C
210862	Veterinary Services, Specialties	742	C
210628	Animal Specialty Services	752	C
210571	Single-family Housing Construction	1521	C
210572	Single-family Housing Construction	1521	C
210609	Single-family Housing Construction	1521	C
211071	Single-family Housing Construction	1521	C
210881	Nonresidential Construction	1542	C
210913	Nonresidential Construction	1542	C
210631	Highway and Street Construction	1611	C
210815	Highway and Street Construction	1611	C

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210850	Meat Packing Plant Manufacturing	2011	C
211072	Flour Mill and Other Food Grain Milling	2041	C
210700	Newspapers Publishing and Printing	2711	C
210686	Commercial Printing–Lithographic	2752	C
210769	Commercial Printing–Lithographic	2752	C
210805	Commercial Printing–Lithographic	2752	C
211086	Hardware Manufacturing	3429	C
210577	Farm Machinery and Equipment	3523	C
210867	Machinery, Except Electrical Manufacturing	3599	C
211099	Machinery, Except Electrical Manufacturing	3599	C
210578	Local Trucking, without Storage	4212	C
210848	Farm Product Warehousing and Storage	4221	C
210584	Construction and Mining Machinery	5082	C
210940	Construction and Mining Machinery	5082	C
210585	Farm and Garden Machinery	5083	C
210619	Farm and Garden Machinery	5083	C
210874	Farm and Garden Machinery	5083	C
210912	Farm and Garden Machinery	5083	C
210846	Gasoline Service Station	5541	C
210591	Recreational Vehicle Parks and Campsites	7033	C

## Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
210761	Photofinishing Laboratory	7384	C
210644	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
210696	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
210878	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	C
210809	Auto Truck Repair Service	7538	C
210810	Auto Truck Repair Service	7538	C
210830	Auto Truck Repair Service	7538	C
210834	Auto Truck Repair Service	7538	C
210844	Auto Truck Repair Service	7538	C
210936	Auto Truck Repair Service	7538	C
211087	Auto Truck Repair Service	7538	C
210676	Car Wash	7542	C
210560	Repair Services, Nec	7699	C
210634	Repair Services, Nec	7699	C
210645	Repair Services, Nec	7699	C
210773	Repair Services, Nec	7699	C
211015	Repair Services, Nec	7699	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
2001122	Colby Experiment Station	A-URTH-SA01	C

## Regulated Confined Animal Feeding Operations Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
2002435	G.h.k. Farms	A-SOTH-BA04	C

## Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources
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## Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000245	Hi-plains Coop, Bulk Plant	02940	C
3000314	Service Oil Co	03863	C
3001386	Pyramid Oil,	24828	C
3001538	Conoco, C C	25799	C
3001547	Phillips 66, Colby (ace Services)	25852	C
3002435	Colby Public Power	42665	C

## Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000936	ACE SERVICES, INC.	C609700001	C

## Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000941	COLBY PWS #6 SITE	C609770627	C
7000942	METZLER PRIVATE WELL SITE	C609771176	C

## Regulated Solid Waste Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
5000134	City of Colby	0152-S	C
5000695	Thomas County HHW	0673-S	C
5000770	Thomas County	0748-S	C

## Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000932	COLBY IMPLEMENT	I-UR06-NO04	C
6001883	COLBY MWTP	M-UR06-OO01	C
6001884	COLBY MWTP	M-UR06-OO01	C
6002036	GOLDEN PLAINS AG. TECH.	P-UR06-OO01	C

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## **Added Sources:**

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

**Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.**



# Added Sources

Public Water Supply: COLBY, CITY OF  
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## Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000092	irrigation water well	10012	B
9000091		10028	B
9000085	cultivated cropland	115	B
9000093	cropland	115	B
9000094	dryland cropland	115	B

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## **Potential Contaminants Summary:**

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

# Potential Contaminants Summary

Public Water Supply: COLBY, CITY OF  
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## Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
13	8	57	12	31	16

A – Microbiological

B\* – Nitrates

C\* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

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## Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

<b>A</b> – Microbiological	<b>B</b> – Inorganic Compounds	<b>B1</b> – Eutrophication – Phosphorous
<b>B2</b> – Sedimentation	<b>B*</b> – Nitrates	<b>C</b> – Synthetic Organic Compounds
<b>C*</b> – Pesticides	<b>D</b> – Volatile Organic Compounds	

# Potential Contaminants Listing

Public Water Supply: COLBY, CITY OF  
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## Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
2086	Bottled and Canned Soft Drinks Production	BOD	A
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
211	Cattle Farm	Sanitary, Fertilizers TSS, pesticides, Erosion and sedimentation	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C*
5082	Construction and Mining Machinery	NA	NA
1381	Drilling Oil and Gas Wells	Oil, Salt Water	B
"	"	"	C
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	A

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	B
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
3429	Hardware Manufacturing	Metals	B
1611	Highway and Street Construction	Sedimentation	B2
4212	Local Trucking, without Storage	VOCs	D
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D
2011	Meat Packing Plant Manufacturing	BOD, pathogens, Oil and grease	A
"	"	"	B*
6515	Mobile Home Park	Sanitary wastes, Fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B*
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
7384	Photofinishing Laboratory	NA	B
"	"	"	D

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7033	Recreational Vehicle Parks and Campsites	sanitary, fertilizers, pesticides	A
"	"	"	B
"	"	"	B1
"	"	"	B*
"	"	"	C*
5093	Scrap and Waste Materials	Metals, TSS	B
3993	Signs and Advertising Display Manufacturing	inorganics, VOCs	B
"	"	"	D
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
3841	Surgical and Medical Instruments Manufacturing	inorganics, VOCs	B
"	"	"	D
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	A
"	"	"	B

## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
752	Animal Specialty Services	Sanitary, fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
2752	Commercial Printing–Lithographic	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
3523	Farm Machinery and Equipment	inorganics	B
"	"	"	D
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
5083	Farm and Garden Machinery	inorganics	B
191	General Farm, Primarily Crop	fertilizers, Pesticides	B
"	"	"	B1
"	"	"	B2



## Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
191	General Farm, Primarily Crop	fertilizers, Pesticides	B*
"	"	"	C*
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	B
"	"	"	C
"	"	"	D
7699	Repair Services, Nec	inorganics	B

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## **Protection Measures:**

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

# Protection Measures

Public Water Supply: **COLBY, CITY OF**  
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## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
2086	Bottled and Canned Soft Drinks Production	BOD	Wastewater pretreatment and/or discharge to a POTW.	40 CFR 407 and State or federal Storm water pollution prevention regulations
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
211	Cattle Farm	Sanitary, Fertilizers TSS, pesticides, Erosion and sedimentation	Proper application of fertilizers and pesticides. Proper cleaning of equipment and disposal of chemicals. Maintain riparian areas along waterways and keep cattle out of these areas. Proper Waste Management and Grazing Management.	KDHE–Livestock Waste Management Section, KAR 28–16, KDA, County Soil Conservation District, NRCS
5082	Construction and Mining Machinery	NA	Discharge to POTW	NA
1381	Drilling Oil and Gas Wells	Oil, Salt Water	Drill water retention and treatment	KAR 28–41, 45, 40 CFR 435

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
2041	Flour Mill and Other Food Grain Milling	BOD, TSS	Wastewater pretreatment and/or discharge to a POTW	40 CFR 122 and State or federal Storm water pollution prevention regulations
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
3429	Hardware Manufacturing	Metals	Minimize outdoor storage and control storm water runoff. Pre-treat process wastewater prior to discharge to POTW	40 CFR 464 and State or federal Storm water pollution prevention regulations
1611	Highway and Street Construction	Sedimentation	Erosion and Sediment Control	KAR 28-16, KDHE
4212	Local Trucking, without Storage	VOCs	Discharge to a POTW	State or federal Storm water pollution prevention regulations
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
2011	Meat Packing Plant Manufacturing	BOD, pathogens, Oil and grease	Wastewater pretreatment and/or discharge to a POTW	40CFR 432 and State or federal Storm water pollution prevention regulations
6515	Mobile Home Park	Sanitary wastes, Fertilizers	Discharge to POTW. Minimize use of lawn chemicals	KAR 28–5
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28–41, 45, 40 CFR 435
7384	Photofinishing Laboratory	NA	Discharge to POTW. Recycle chemicals	CFR 40 459
7033	Recreational Vehicle Parks and Campsites	sanitary, fertilizers, pesticides	Discharge to POTW. Minimize use of lawn chemicals	NA

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
5093	Scrap and Waste Materials	Metals, TSS	Minimize contact with storm water	State or federal Storm water pollution prevention regulations
3993	Signs and Advertising Display Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	40 CFR 459 and State or federal Storm water pollution prevention regulations
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28–48, KDHE, KDEM
3841	Surgical and Medical Instruments Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
742	Veterinary Services, Specialties	Sanitary, Inorganics TSS	Discharge to POT	NA

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
752	Animal Specialty Services	Sanitary, fertilizers	Collect and treat wastes.	NA
2759	Commercial Printing NEC	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
2752	Commercial Printing–Lithographic	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
3523	Farm Machinery and Equipment	inorganics	Discharge to POTW	State or federal Storm water pollution prevention regulations
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
5083	Farm and Garden Machinery	inorganics	Discharge to POTW	NA

## Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
191	General Farm, Primarily Crop	fertilizers, Pesticides	Maintain good erosion control practices and minimize the use of chemicals	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA



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## **Assessment Analysis:**

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

# Assessment Analysis

Public Water Supply: **COLBY, CITY OF**  
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## Ground Water Multiple Wells Analysis

**A** – Microbiological    **B** – Inorganic Compounds  
**B\*** – Nitrates            **C** – Synthetic Organic Compounds  
**C\*** – Pesticides        **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	Yes	1	1	1	1	1	1
5	Does a PWS own or control all the areas around the wells?	No	1	1	1	1	1	1
6	Does Zone B consist entirely of native grass?	No	2	2	2	2	2	2
7	Is there a contaminated well in Zone B?	Yes	1	1	1	1	1	1
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
12	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0
16	Have all livestock producers implemented water quality protection measures?	No	1	0	1	0	0	0
17	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
24	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
25	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
29	Is a solid waste landfill in Zone B or C?	Yes	1	1	1	1	1	1
30	Are there unplugged, abandoned water wells present in Zone C?	Yes	2	1	1	1	1	1
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
34	Is each confined livestock facility registered with KDHE?	Yes	0	0	0	0	0	0
35	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
36	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
39	Are watershed water quality protection plans in place?	No	1	1	1	1	1	1

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## **Site Comments:**

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

# Site Comments

Public Water Supply: **COLBY, CITY OF**  
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## Comments for Unregulated Sites

Did Not Receive Any Comments
------------------------------

## Comments for Regulated Confined Animal Feeding Operations Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Colby Experiment Station	2001122	There is no groundwater monitoring at this facility.	Nicole Fisher
G.h.k. Farms	2002435	There is no groundwater monitoring at this facility. All run off from the pen flows onto adjacent cropland.	Nicole Fisher

## Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments
------------------------------

## Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Colby Public Power	3002435	The site is currently being monitored from the pipeline diesel leak in 1998. The leak was upgradient of public water supplies.	Nicole Fisher

## Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Conoco, C C	3001538	The site is closed from a waste oil contamination. The ground was excavated to 8' to remove contaminated soil.	Nicole Fisher
Hi-plains Coop, Bulk Plant	3000245	The site is closed from the gasoline leak in 1996. PWS was down gradient and no contamination was detected.	Nicole Fisher
Phillips 66, Colby (ace Services)	3001547	This site had hydrocarbon contamination and is down gradient of the PWS. The site is currently active.	Nicole Fisher
Pyramid Oil,	3001386	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	Nicole Fisher
Service Oil Co	3000314	The site is closed from a gasoline leak. No contamination was detected.	Nicole Fisher

## Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments
------------------------------

## Comments for Regulated Solid Waste Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
City of Colby	5000134	This is a composting facility.	Nicole Fisher

## Comments for Regulated Waste Water Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
COLBY IMPLEMENT	6000932	This facility uses nondischarging lagoons.	Nicole Fisher

## Comments for Regulated Waste Water Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
COLBY MWTP	6001883	This facility uses nondischarging lagoons.	Nicole Fisher
GOLDEN PLAINS AG. TECH.	6002036	This facility sends its wastewater to the Colby MWTP.	Nicole Fisher

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### **Added Site Comments:**

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.



# Added Site Comments

Public Water Supply: **COLBY, CITY OF**  
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## Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
cropland	9000093	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
cultivated cropland	9000085	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
dryland cropland	9000094	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
irrigation water well	9000092	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Unknown	9000091	This information was obtained from the wellhead Protection Plan.	Nicole Fisher

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## **Analysis Question Comments:**

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

# Analysis Question Comments

Public Water Supply: **COLBY, CITY OF**  
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## Comments for Analysis Questions

Analysis Question	Question Comments	Author
Are cropland nutrient management plans in place?	Established management procedure for the cropland is for soil testing to be done annually and fertilizer to be applied at or below recommended rates. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	Established management procedure for the cropland is for soil testing to be done annually and for fertilizer to be applied at or below recommended rates. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher